WHAT IS CLAIMED IS:

1. A method of treating a liquid slurry of comminuted cellulosic fibrous material in a substantially vertical vessel having an internal surface, comprising:

(a) introducing the slurry into the vessel so that the slurry moves substantially downwardly in the vessel in a column; and

(b) at a plurality of vertically spaced locations in the vessel temporarily relieving compressive forces within the column and the normal forces on the internal surface of the vessel so that friction between the comminuted material and the vessel internal surface is temporarily decreased, or substantially eliminated, providing more uniform flow of the material in the vessel.

2. A method as recited in claim 1 wherein (b) is practiced to temporarily reduce the friction by at least 20% for a slurry with a consistency between about 8-20%.

3. A method as recited in claim 1 wherein (b) is practiced by providing a plurality of vertically spaced compression-relieving surface manifestations on the internal surface of the vessel.

4. A method as recited in claim 3 wherein (b) is further practiced by providing at least one substantially continuous annular element having an inner surface that protrudes into the vessel from the internal surface a greater distance at a lower portion thereof than at a higher portion thereof.

5. A method as recited in claim 4 wherein (b) is further practiced by providing a curved inner surface.

6. A method as recited in claim 4 wherein (b) is further practiced by providing a sloped inner surface having an angle with respect to the vertical of between about 5-70°.

7. A method as recited in claim 3 wherein (b) is further practiced by vertically spacing at least some manifestations between about 1-12 feet, and providing the

manifestations so that the maximum radial spacing thereof from the internal surface is between about 1-12 inches.

8. A method as recited in claim 3 wherein (b) is further practiced by providing at least one surface manifestation with an inner surface which contacts the slurry column of a material having low friction properties substantially the same as polytetrafluoroethylene.

9. A method as recited in claim 3 further comprising (c) cooking the material of the slurry in the vessel at a temperature above 90°C with a cooking liquid.

10. A method as recited in claim 9 wherein (c) is practiced by cooking the material with kraft cooking liquor at a temperature above 100°C, while it has a consistency of between about 8-20%.

11. A substantially vertical vessel having an internal surface and comprising:

a plurality of vertically spaced sets of circumferentially discontinuous protrusions extending inwardly from said internal surface a maximum distance of about 2-12 inches;

an inlet at or near a top portion of said vessel; and

an outlet at or near a bottom portion of said vessel.

12. A vessel as recited in claim 11 wherein said protrusions are arcuate in cross-section.

13. A vessel as recited in claim 11 wherein said protrusions have a substantially isosceles triangular cross section with an apex angle of between about 10-175°.

14. A vessel as recited in claim 11 wherein said protrusions have a substantially rectangular cross-section.

15. A vessel as recited in claim 11 wherein said protrusions have a height of between about 1-3 feet, and a vertical spacing between at least two sets of between about 1-12 feet.

16. A vessel as recited in claim 15 wherein at least two sets of protrusions vertically spaced between about 1-12 feet have the protrusions thereof circumferentially offset from one set to the next.

17. A vessel as recited in claim 11 wherein the protrusions are circumferentially spaced from each other between about 5-30°, and an arcuate distance of between about 1-10 feet.

18. A method of treating a liquid slurry of comminuted cellulosic fibrous material in a substantially vertical vessel having an internal surface, comprising:

(a) introducing the slurry into the vessel so that the slurry moves substantially downwardly in the vessel in a column; and

(b) at a plurality of vertically spaced locations in the vessel, causing the slurry to flow over surface manifestations which extend into the vessel a maximum distance of between about 1-12 inches.

19. A method as recited in claim 18 wherein (b) is further practiced by providing a plurality of circumferentially discontinuous protrusions at each of a plurality of different levels within the vessel.

20. A method as recited in claim 3 wherein (b) is further practiced by providing a plurality of circumferentially discontinuous protrusions at each of a plurality of different levels within the vessel.

21. A method as recited in claim 18 wherein (b) is further practiced by providing at least one substantially continuous annular element having an inner surface that protrudes into the vessel from the internal surface a greater distance at a lower portion thereof than at a higher portion thereof, and (a) is further practiced by introducing a slurry having a consistency between about 8-20%.

22. A substantially vertical vessel having an internal surface, and comprising:

an inlet at or adjacent a top portion of said vessel;

an outlet at or adjacent a bottom portion of said vessel; and

at least one substantially continuous annular protrusion connected to said internal surface and in a substantially horizontal plane, and having a maximum spacing from said internal surface of between about 1-12 inches, said protrusion having a cross-section selected from the group consisting essentially of right, isosceles, or scalene triangular, arcuate, and rectangular.

23. A vessel as recited in claim 22 wherein said protrusion has a substantially isosceles triangular cross-section with an apex angle between about 10-175°.

24. A vessel as recited in claim 22 further comprising a plurality of said protrusions, vertically spaced from each other between about 1-12 feet, and each having a height of between about 1-3 feet.

25. A vessel as recited in claim 22 wherein said protrusion is arcuate in cross-section with a radius of curvature equal to or greater than its height.